

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

GL\_Mackinac 2019 ESI INVERT Polygons, Lines

**1.2. Summary description of the data:**

These feature classes reside within the BIOLOGY Feature Data Set of the Great Lakes - Straits of Mackinac - 2019 ESI Geodatabase. It contains vector polygons and lines representing INVERT data for the Great Lakes - Straits of Mackinac study area.

The study area includes the Straits of Mackinac, nearby portions of Lake Michigan and Lake Huron, and adjacent lands and waters in northern Michigan. These data sets contain sensitive biological resource data for freshwater and terrestrial invertebrate species. Vector polygons and lines in these data sets represent invertebrate distribution.

Species-specific abundance, seasonality, status, life history, and source information are stored in associated data tables (described in Entity Attribute Overview below) designed to be used in conjunction with this spatial data layer. This data set is a portion of the ESI data for the Great Lakes - Straits of Mackinac study area.

As a whole, the ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil, and include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2018 to 2019

**1.5. Actual or planned geographic coverage of the data:**

W: -85.891666, E: -83.250001, N: 46.17465708, S: 45.250003

Bounding box for the Straits of Mackinac area of interest in northern Michigan.

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

Map (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:****1.8.1. If data are from another observing system, please specify:****2. Point of Contact for this Data Management Plan (author or maintainer)****2.1. Name:**

ESI Program Manager

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:****2.4. E-mail address:**

orr.esi@noaa.gov

**2.5. Phone number:****3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

ESI Program Manager

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?****4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

## 5. Data Lineage and Quality

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

### 5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

*(describe or provide URL of description):*

Lineage Statement:

Sources and Process Steps cited below in this metadata record include those used for two distinct areas of the Great Lakes: the Straits of Mackinac in northern Michigan, and the St. Clair / Detroit River System in southeastern Michigan. This is because these two study areas were initially combined into a single ArcGIS geodatabase, before being separated for publication. Some sources and process steps were used in both study areas, but there may be others that pertain to one study area and not the other. As a final procedural step to prepare the geodatabases for publication, the spatial data data corresponding to each respective area were clipped in ArcGIS according to the two distinct geographic study areas.

Process Steps:

- 2019-09-23 00:00:00 - Two main sources of data were used to depict invertebrate distribution and seasonality for the INVERT data layer: 1) personal interviews with resource experts from U.S. Fish and Wildlife Service (USFWS) and Michigan Natural Features Inventory (MNFI) and 2) published and unpublished datasets. Invertebrates depicted in this atlas include selected freshwater and terrestrial species of ecological and/or conservation value. Hine's emerald dragonfly distribution was mapped using the USFWS designated critical habitat. State and federally listed insects, gastropods, and bivalves were mapped from the MNFI Biotics database. Names for certain state listed species, as requested by MNFI data providers, were generalized to "Threatened insect", "Endangered snail", "Threatened snail", "Endangered mussel", and "Threatened mussel"; federally listed species names were generalized to "Federally endangered mussel".
- 2019-09-23 00:00:00 - Two main sources of data were used to depict invertebrate line distribution and seasonality for the INVERTL data layer: 1) personal interviews with resource experts from Michigan Department of Natural Resources (DNR) and 2) unpublished datasets. Freshwater mussel streams were mapped using mussel occurrence prediction data from DNR. These data were mapped as lines where the streams occur, and species names from this dataset were not generalized (mapped using genus and species names).
- 2019-09-23 00:00:00 - The above digital and/or hardcopy sources were compiled by the project biologist to create the INVERT and INVERTL data layers. Depending on the type of source data, three general approaches are used for compiling the data layers: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:50,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources.

See the Lineage section for additional information on the type of source data for this data layer. The ESI, biology, and human-use data are compiled into the standard ESI digital data format. A second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the INVERT and INVERTL data layers are made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

- 2019-09-30 00:00:00 - Sources and Process Steps cited above in this metadata record include those used for two distinct areas of the Great Lakes: the Straits of Mackinac in northern Michigan, and the St. Clair / Detroit River System in southeastern Michigan. This is because these two study areas were initially combined into a single ArcGIS geodatabase, before being separated for publication. Some sources and process steps were used in both study areas, but there may be others that pertain to one study area and not the other. As a final procedural step to prepare the geodatabases for publication, the spatial data corresponding to each respective area were clipped in ArcGIS according to the two distinct geographic study areas.

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

## **6. Data Documentation**

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive

facility

- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:**

**6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/58463>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

**7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**

Office of Response and Restoration (ORR)

**7.2.1. If data hosting service is needed, please indicate:**

**7.2.2. URL of data access service, if known:**

[https://response.restoration.noaa.gov/esi\\_download](https://response.restoration.noaa.gov/esi_download)

**7.3. Data access methods or services offered:**

Data can be accessed by downloading the zipped ArcGIS geodatabase from the

Download URL (see Distribution Information). Questions can be directed to the ESI Program Manager (Point Of Contact).

#### **7.4. Approximate delay between data collection and dissemination:**

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

### **8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

#### **8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

**8.1.1. If World Data Center or Other, specify:**

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

#### **8.2. Data storage facility prior to being sent to an archive facility (if any):**

Office of Response and Restoration - Seattle, WA

#### **8.3. Approximate delay between data collection and submission to an archive facility:**

#### **8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

### **9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*